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EXRAND-M-46
17 September 1971

**COMIREX SUBCOMMITTEE
For
EXPLOITATION RESEARCH AND DEVELOPMENT**

**Minutes of Meeting Held in IAS Conference Room
0900-1130, Wednesday, 25 August 1971**

MEMBERS AND STAFF PRESENT

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***Briefing on Special Project Only**

1. Special Item.

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[redacted] presented a special Navy project to the sub-committee. A previously scheduled briefing, "Future Technological Impacts", will be presented at a later time.

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GROUP 1: EXCLUDED FROM
AUTOMATIC DOWNGRADING
AND DECLASSIFICATION

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2. Approval of Minutes.

UNCLASSIFIED

The Executive Secretary noted some of the items of the previous meeting (EXRAND-M-45) and the minutes of that meeting were subsequently approved.

3. Announcements.

UNCLASSIFIED

a. The Chairman paid tribute [] on his last meeting as representative of NPIC. He noted that [] was assigned to NPIC from DIA and has served at times as Deputy Chief of Development and Engineering, a Special Technical Assistant, Chief of Projects and Programs, and chairman of several special studies groups dealing with R&D. We know him as the NPIC Representative to EXRAND and Chairman of the Technical Task Team. He is an extremely knowledgeable, experienced, professional R&D man dedicated to working for the entire intelligence community. He has been selected to study at Georgetown University for an advanced degree. The Chairman presented [] with the EXRAND award for outstanding service.

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UNCLASSIFIED

b. The Executive Secretary noted that copies of the West Coast trip report had been sent to members and participants.

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c. [] the new Chairman of the Technical Task Team.

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d. The Executive Secretary requested that further distribution requirements for the Third Annual Report be provided to the secretary. There are still interested parties that have not yet received their copies. The members were requested to provide addresses for further distribution. There followed a lengthy discussion on the security classification of the report which is now considered too high for required usage. The next publication will be prepared to allow for a reduction in the security level of the report. Further rapport with COMIREX membership regarding this reduction in security level for this report will be attempted.

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e. [] introduced the new Viewing Systems Handbook produced by NPIC as a community reference intended for optical engineers and keyed to the kind of optical knowledge and problems unique to imagery exploitation fields within the community. Interested parties should contact [] the new NPIC Representative, for copies of this reference book. In order to distribute this handbook within the community more favorably, all orders should be placed by the next EXRAND meeting, 29 September 1971.

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4. Old Business.

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a. [] stated that by the next meeting the Procurement Coordinating Team Chairman expected to have information concerning Team actions such as community distribution of surplus equipment lists. He was reminded that the PCT is now coordinating items for inclusion in the report due before February 1972 to the Chairman of COMIREX on "Benefits Derived from Joint Procurements through EXRAND Coordination in FY 1971".

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b. The Executive Secretary discussed the forthcoming trip to RADC scheduled for 27-28 September. He handed out a schedule and itinerary for this trip and requested an immediate preliminary response from those who planned to participate. Indications from the members showed that 18 participants will make the trip. [] stated that the visit to RADC would be very worthwhile for the membership and commented that there were a number of pertinent R&D projects underway on various kinds of viewing equipment; indeed, RADC had a substantial R&D program in optical film viewing development. A new rectifier for the new system is under contract. They also have the latest on SLAR and correlators, and on electronic viewing equipment and laser illumination systems. RADC also has an extensive computer application system pertaining to the development projects of imagery exploitation. LCol. Burkard, USAF, is preparing a more complete itinerary and agenda for this trip.

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c. The Executive Secretary commented on the desirability of a trip to EKC which still required permission and coordination. The visit would probably last one full day to include the processing site [] will be requested to set up this trip, if possible, at a convenient time during October (recommend 21 October).

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d. The Executive Secretary will request a special briefing for the next meeting concerning the status of Near Real Time as it affects R&D exploitation.

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e. Attachment three to EXRAND-M-45 (previous meeting) concerns a listing of image manipulation and enhancement projects underway within the community. The Executive Secretary noted particularly the concluding paragraph in [] report calling for the need for careful coordination in development and utilization in this category of projects.

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5. New Business.

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a. The Chairman presented to EXRAND a proposed report addressed to the Chairman of COMIREX responding to his requirement for an evaluation of the effects of equipment usage []. The Chairman of the Technical Task Team had canvassed the Team membership for responses and had prepared the report summarizing the consensus of the development community. After a change was made to the paragraph referring to the preliminary nature of the report, it was approved and will now be forwarded to the Chairman of COMIREX.

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b. The Chairman called for a schedule by the Technical Task Team Chairman for reporting the 1972-73 community R&D project programs which would form the Fourth Annual Report. [] presented his schedule which is attached. At this time the importance of solving the classification problem in an attempt to reduce the report to a Secret level was again voiced by the members.

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6. Special Briefing and Demonstration of ICM.

UNCLASSIFIED

[], TSG/NPIC, who presented a briefing on the Image Comparison Microstereoscope (ICM). The instrument had just been delivered as a prototype to NPIC and is now in the first step of test and evaluation. Following the briefing the meeting adjourned and the EXRAND members were invited to see the ICM. A resume of [] briefing is attached.

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Executive Secretary, EXRAND

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ATTACHMENT ONE TO

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NPIC/TSG/RED/SDB-100/71
24 August 1971

MEMORANDUM FOR: Chairman, EXRAND

SUBJECT : Schedule for Publication of the
EXRAND Technical Task Team
Consolidated R&D Project List,
FY 1972 and 1973

The following schedule has been established for the
publication of the fourth annual report of the consolidated
R&D project list for FY 1972 and 1973.

8 September - Draft list conference at NPIC

5 October - Final review conference at NPIC

10 December - Distribution

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Chairman, Technical Task Team, EXRAND

Distribution:

Original - Addressee

1 - each EXRAND Member

2 - Task Team File

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ATTACHMENT TWO TO

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BRIEFING RESUME

IMAGE COMPARISON MICROSTEREOSCOPE

STATUS REPORT

PRESENTED BY

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25 August 1971

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IMAGE COMPARISON MICROSTEREOSCOPESTATUS REPORT

The Image Comparison Microstereoscope (ICM) was delivered to NPIC on 19 August 1971 after four years of development at Bausch & Lomb, Inc., and at a cost to the government of some [REDACTED]. This experimental prototype has been developed to permit the photo analyst to rapidly compare film chips from as many as four different reconnaissance missions or sensors. Three stereo techniques (mechanical and electrical alternating, and "split field stereo" -- simultaneous, side-by-side display of two stereo pairs) and five non-stereo techniques (split field mono, superimposition, "traveling" split field, flicker, and color comparison) have been incorporated.

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The instrument -- essentially, two microstereoscopes merged into a single device with a single binocular viewing position -- contains four optical paths, each with 10X to 115X zoom magnification, anamorphic correction (for difficult stereo fusion and approximate superimposition rectification), image rotation, and high intensity light sources. These are combined into a binocular comparison system containing numerous prisms, beam splitters, masks, and mirrors. The design goal for maximum system resolution was 600 lines/mm. Four independently rotatable 5" x 5" film chip stages are interconnected by unique pantograph linkages for both independent and common lateral translation.

The ICM is currently undergoing Acceptance Tests, to be followed by an intensive Engineering Evaluation. It will be thoroughly tested for application to photo interpretation, image quality assessment, and manipulation of unconventional imagery. Representative interpreters from resident NPIC components will be individually trained in ICM operation and then utilized as test subjects in various Human Factors and Operational Suitability Evaluations over a four-month period. A major goal of these evaluations will be to determine the relative value of the available comparison techniques and simplify the design of any follow-on development. The resident NPIC components taking part in these scheduled evaluations include DIA/DI-8, Army/SPAD, and CIA/IAS -- in addition to NPIC engineering and operational groups. The ICM will be

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available for evaluation by other potential users in early calendar year 1972. Depending upon the results of both these and the scheduled T&E, NPIC plans to solicit orders for a joint purchase of follow-on ICM's before the end of FY-1972.

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